

# Pillar Drills

## User Manual



505203  
**AT2001DP**



505204  
**AT2501DP**



505205  
**AT2801FDP**



505206  
**AT3202FDP**

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## Declaration of Conformity

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### Copied from CE Certificate

The undersigned, Galen Chen authorised by  
Qingdao D&D Electromechanical Technologies Co.,  
Ltd. Jiaozhou Branch No.1 D&D Road, Jiaobei Town,  
Jiaozhou City, Qingdao, Shandong, China

### Drilling Machine

Manufactured Qingdao D&D Electromechanical  
Technologies Co., Ltd. is in compliance with the  
standards determined in the following Council  
Directive.

**EN 61029-1:2009+A11:2010  
2006/42/EC ANNEX 1**



# Warning

The symbols below advise that you follow  
the correct safety procedures when using  
this machine.



Fully read manual  
and safety instructions  
before use



Ear protection  
should be worn



Eye protection  
should be worn



Dust mask  
should be worn

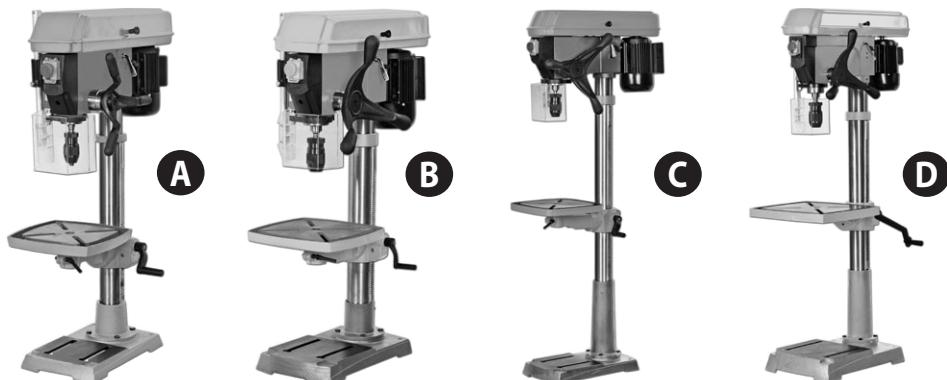


HAZARD  
Motor gets hot

## What's Included

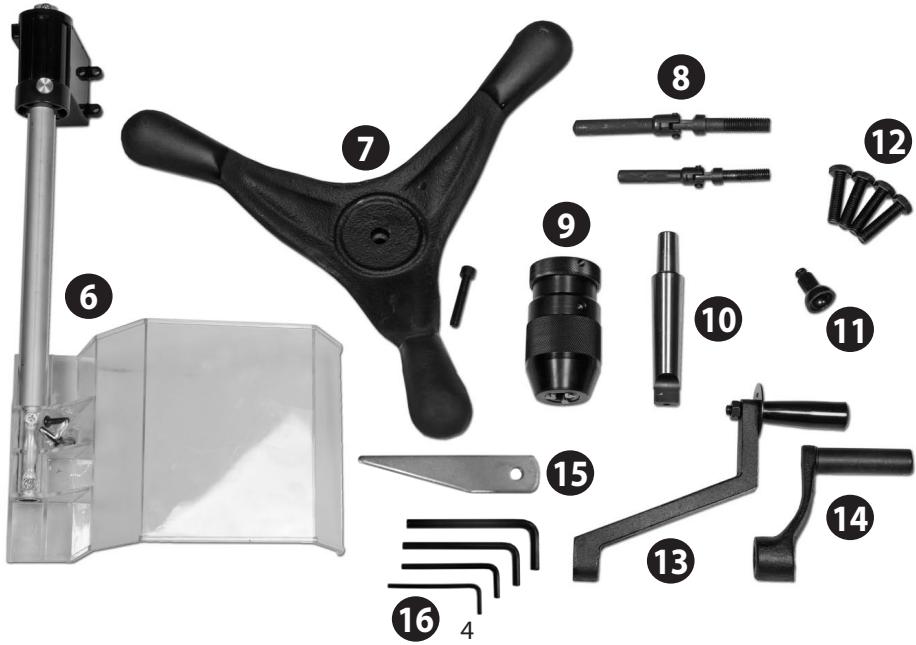
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Quantity	Item	Part	Model Number
1 No	AT2001DP Pillar Drill	A	Code: 505023
	AT2801DP Pillar Drill	B	Code: 505204
	AT2801FDP Pillar Drill	C	Code: 505205
	AT3202FDP Pillar Drill	D	Code: 505206
<b>Box Containing:</b>			
1 No	Pillar drill head	1	
1 No	Base	2a	(505203-505204-505205 Only)
		2b	(505206 Only)
1 No	Drill table mounting bracket arm assembly	3a	(505203-505204-505205 Only)
		3b	(505206 Only)
1 No	Drill table	4a	(505203-505204-505205 Only)
		4b	(505206 Only)
1 No	Drill pillar complete with mounting flange, rise and fall rack and retaining ring	5a	(505203-505204 Only)
		5b	(505205 Only)
		5c	(505206 Only)
1 No	Chuck guard assembly with micro switch and three Phillips screws	6	
<b>Bags Containing:</b>			
1 No	Lever feed handle assembly with Hex bolt	7	
2 No	Bristol clamping handles	8	
1 No	Keyless Chuck	9	
<b>(NOTE CHUCKS CAN VARY IN SIZE DEPENDING ON MODEL)</b>			
1 No	Morse taper arbor for chuck assembly	10	
1 No	Pulley cover knob & Phillips screw	11	
4 No	Hex bolts	12	
	M10x40mm		(505203-505204-505205 Only)
	M12x40mm		(505206 Only)
1 No	Crank handle for table rise and fall mechanism	13	(505206 Only)
1 No	Crank handle for table rise and fall mechanism	14	(505203-505204-505205 Only)
1 No	Morse taper drift	15	
1 No	3-4-5-6mm Hex keys	16	



## What's Included

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Having unpacked your machine and its accessories, please check the contents against the equipment list "What's Included"; if there are any discrepancies, please contact Axminster Tool Centre using the procedures laid down in the catalogue.



## PLEASE DISPOSE OF THE PACKAGING RESPONSIBLY; MUCH OF THE MATERIAL IS RECYCLABLE

The machine and its accessories will arrive coated with heavy corrosion preventative grease and greased wax paper or plastic wrapping. These will need to be cleaned from the machine, its components and accessories prior to it being set up and commissioned. Use water soluble de greaser to remove the barrier grease. Be warned, it will stain if you splash it on clothing etc.



## WARNING! WEAR OVERALLS, RUBBER GLOVES AND EYE PROTECTION!

After cleaning, lightly coat the exposed metal surfaces of the machine with a thin layer of light machine oil. N.B If you used water soluble de greaser make sure you apply this thin film sooner rather than later. **Please read the Instruction Manual prior to using your new machine; as well as the installation procedure, there are daily and periodic maintenance recommendations to help you keep your machine on top line and prolong its life. Keep this Instruction Manual readily accessible for any others who may also be required to use the machine.**

## General Safety Instructions

### Work Place/Environment/Installation

#### Mains Powered Machines/ Primary Precautions

These machines are supplied with a moulded 13 Amp. Plug and 3 core power cable. Before using the machine inspect the cable and the plug to make sure that neither are damaged. If any damage is visible have the machine inspected/repaired by a suitably qualified person. If it is necessary to replace the plug, it is preferable to use an 'unbreakable' type that will resist damage. Only use a 13 Amp plug, make sure the cable clamp is tightened securely. Fuse at 13 Amp. If extension leads are to be used, carry out the

same safety checks on them, and ensure that they are correctly rated to safely supply the current that is required for your machine. It is also recommended that the power supply outlet is the switched type, and that the supply is switched off whilst plugging in, or unplugging the machine.

### General Instructions for 230V Tools

#### Good Working Practices/Safety

The following suggestions will enable you to observe good working practices, keep yourself and fellow workers safe and maintain your tools and equipment in good working order.



## WARNING! KEEP TOOLS AND EQUIPMENT OUT OF THE REACH OF YOUNG CHILDREN!

### Work Place/Environment

Do not use when or where it is liable to get wet. If the machine is to be used outside and it starts to rain, stop work and move it inside. If machine has got wet; dry it off as soon as possible, with a cloth or paper towel.

Do not use 230V a.c. powered machines anywhere within a site area that is flooded or puddled, and do not trail extension cables across wet areas.

Keep the machine clean; it will enable you to more easily see any damage that may have occurred.

Clean the machine with a damp soapy cloth if needs be, do not use any solvents or cleaners, as these may cause damage to any plastic parts or to the electrical components.

Keep the work area as uncluttered as is practical, this includes personnel as well as material.



## WARNING! UNDER NO CIRCUMSTANCES SHOULD CHILDREN BE ALLOWED IN WORK AREAS!

## General Safety Instructions

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It is good practice to leave the machine unplugged until work is about to commence, also make sure to unplug the machine when it is not in use, or unattended. Always disconnect by pulling on the plug body and not the cable.

Once you are ready to commence work, remove any tools used in the setting operations (if any) and place safely out of the way. Re-connect the machine. Carry out a final check e.g. check the drill bit is securely tightened in the machine, check you have the correct speed and function set, check that the power cable will not 'snag' etc.

Make sure you are comfortable before you start work, balanced, not reaching etc. If the work you are carrying out is liable to generate flying grit, dust or chips, wear the appropriate safety clothing, goggles, gloves, masks etc., If the work operation appears to be excessively noisy, wear ear-defenders. If you wear your hair in a long style, wearing a cap, safety helmet, hairnet, even a sweatband, will minimise the possibility of your hair being caught up in the rotating parts of the machine, likewise, consideration

should be given to the removal of rings and wristwatches, if these are liable to be a 'snag' hazard. Consideration should also be given to non-slip footwear, etc.

**DO NOT** work with cutting or boring tools of any description if you are tired, your attention is wandering or you are being subjected to distraction. A deep cut, a lost fingertip or worse; is not worth it!

**DO NOT** use this machine within the designated safety areas of flammable liquid stores or in areas where there may be volatile gases. There are very expensive, very specialised machines for working in these areas, **THIS IS NOT ONE OF THEM.**

**CHECK** that drills are the correct type and size, are undamaged and are kept clean and sharp, this will maintain their operating performance and lessen the loading on the machine. Above all, **OBSERVE....** make sure you know what is happening around you, and **USE YOUR COMMON SENSE.**

## General Safety Instructions for Drilling Machines

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1. Do not operate the machine without carrying out a preliminary inspection.
2. Check that the speed is correct for the planned operation, and the upper drive belt cover is closed and fastened secure.
3. Check the drill bit is the correct size and type, is correctly fitted and tightened in the chuck.
4. Make sure that the drillhead, the table bracket arm, the table tilt and the table swivel clamps are all locked before any drilling is attempted.
5. Do not attempt to carry out any drilling operation on material that has not been secured to the drill table, either by vise or clamp.
6. Remove any tools (chuck key, spanners etc), that may have been used in setting up operations and put them away in their correct stowage positions.
7. Try to arrange the drilling operation so that the drill tip does not come in contact with the table.
8. Always allow the drill to stop before removing drillings or swarf from around the job or the table.
9. NEVER remove 'flying' swarf strands from the drill whilst it is turning.
10. It is a good precaution to wear eye protection when drilling, especially using small drills, or very hard material that produces small chips.
11. It is not a good idea to wear gloves when operating a drill press.
12. After the job is completed, remove all tools and accessories from the machine, check that drill bits are still sharp and re-use able.
13. Clean the machine down thoroughly, including removing coolant or cutting compounds from the drill table.
14. Lightly coat all metal surfaces with a light oil coating.
15. Disconnect the machine from the supply. Secure the cable/plug clear of the floor.

## Specification

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<b>Model</b>	<b>AT2001DP</b>
<b>Code</b>	<b>505203</b>
<b>Power</b>	<b>375W (230V)</b>
<b>Speed Range</b>	<b>(12) 180-2,740rpm</b>
<b>Throat</b>	<b>195mm</b>
<b>Taper</b>	<b>2MT</b>
<b>Chuck Cap/Type</b>	<b>13mm Keyless</b>
<b>Chuck Travel</b>	<b>80mm</b>
<b>Max Chuck to Table</b>	<b>320mm</b>
<b>Max Chuck to Base</b>	<b>560mm</b>
<b>Diameter of Column</b>	<b>70mm</b>
<b>Table Size</b>	<b>300 x 300mm</b>
<b>Table Tilt</b>	<b>-45° to +45°</b>
<b>Base Size</b>	<b>420 x 250mm</b>
<b>Overall L x W x H</b>	<b>630 x 330 x 1,050mm</b>
<b>Weight</b>	<b>58kg</b>

<b>Model</b>	<b>AT2801DP</b>
<b>Code</b>	<b>505204</b>
<b>Power</b>	<b>550W (230V 1ph)</b>
<b>Speed Range</b>	<b>(16) 160-3,000rpm</b>
<b>Throat</b>	<b>215mm</b>
<b>Taper</b>	<b>3MT</b>
<b>Chuck Cap/Type</b>	<b>16mm Keyless</b>
<b>Chuck Travel</b>	<b>80mm</b>
<b>Max Chuck to Table</b>	<b>315mm</b>
<b>Max Chuck to Base</b>	<b>555mm</b>
<b>Diameter of Column</b>	<b>80mm</b>
<b>Table Size</b>	<b>355 x 355mm</b>
<b>Table Tilt</b>	<b>-45° to +45°</b>
<b>Base Size</b>	<b>480 x 280mm</b>
<b>Overall L x W x H</b>	<b>720 x 370 x 1,100mm</b>
<b>Weight</b>	<b>66kg</b>

<b>Model</b>	<b>AT2801FDP</b>
<b>Code</b>	<b>505205</b>
<b>Power</b>	<b>550W (230V 1ph)</b>
<b>Speed Range</b>	<b>(16)160-3,000rpm</b>
<b>Throat</b>	<b>215mm</b>
<b>Taper</b>	<b>3MT</b>
<b>Chuck Cap/Type</b>	<b>16mm Keyless</b>
<b>Chuck Travel</b>	<b>80mm</b>
<b>Max Chuck to Table</b>	<b>610mm</b>
<b>Max Chuck to Base</b>	<b>1,100mm</b>
<b>Diameter of Column</b>	<b>80mm</b>
<b>Table Size</b>	<b>355 x 355mm</b>
<b>Table Tilt</b>	<b>-45° to +45°</b>
<b>Base Size</b>	<b>480 x 280mm</b>
<b>Overall L x W x H</b>	<b>720 x 370 x 1,625mm</b>
<b>Weight</b>	<b>73kg</b>

<b>Model</b>	<b>AT3202FDP</b>
<b>Rating</b>	<b>505206</b>
<b>Power</b>	<b>0.75kW (400V 3ph)</b>
<b>Speed Range</b>	<b>(12) 200-1,990rpm</b>
<b>Throat</b>	<b>257.5mm</b>
<b>Taper</b>	<b>3MT</b>
<b>Chuck Cap/Type</b>	<b>20mm Keyless</b>
<b>Chuck Travel</b>	<b>120mm</b>
<b>Max Chuck to Table</b>	<b>565mm</b>
<b>Max Chuck to Base</b>	<b>1,045mm</b>
<b>Diameter of Column</b>	<b>92mm</b>
<b>Table Size</b>	<b>475 x 425mm</b>
<b>Table Tilt</b>	<b>-45° to +45°</b>
<b>Base Size</b>	<b>570 x 380mm</b>
<b>Overall L x W x H</b>	<b>850 x 475 x 1,685mm</b>
<b>Weight</b>	<b>76kg</b>

# Assembly

Please read through the section entitled illustration and parts description, to identify the parts quickly and easily.

Place the base (2) on the bench or (floor) and place the mounting flange of the column (5) onto the seating flange of the base, align the holes. Use the four Hex bolts (12) secure the column to the base (see fig 1). Loosen the socket grub screw holding the cup chamfered retaining collar to the column (with the supplied Hex key), remove it and the rise and fall rack, put safely aside (see fig 2).

Take the drill table mounting bracket arm (3) and twist the worm drive shaft with your fingers such that the whole shaft protrudes from the casting and the worm gear itself is clear of the square recess in the main body of the casting (see fig 3-4).

Locate and fit the crank handle (13-14) to the shaft, ensuring that you tighten the grub screw onto the machined flat on the shaft. This will keep the worm gear in position (see figs 5-6).

Pick up the rise and fall gear rack, identify the top and the bottom, (the rack gearing is cut asymmetrically, with the gear cut extending closer to the bottom), make sure you have the rack the right way up, as it will allow you to drive the drill table up and down over its full range (see fig 7).

Fit the rise and fall rack into the square recess in the mounting body casting, ensure that it is engaged with the pinion, (see figs 8-9) and lower the combined mechanism over the column (5). Allow it to slide down the column until the rise and fall rack is located in the cup chamfer in the top of the mounting flange (see figs 10-11). Replace the cup chamfered retaining collar over the column and slide it down onto the top of the rack. Lock it in place with the grub screw, ensuring that it has captured the upper end of the rack securely, but not too tight that the rack can not be swivelled around the pillar (see fig 2).

Check that the bracket can be driven up and down the column and can swivel around the pillar. Locate the Bristol clamping handle (8) and screw it into the threaded hole to the rear of the mounting bracket arm (3) and tighten, (see fig 12) check it has 'pinched' up on the column and the bracket is immobile; both in its up and down travel and swivel movement.

Slot the drill table (4a) into the machined hole to the front of the mounting arm (3a) and screw a Bristol clamping handle (8) into to the threaded hole beneath the table and tighten, (see fig 13) check it has 'pinched' up on the drill table spigot and the drill table is immobile.

For 505206 offer up the face plate of the table (4b) to the face plate of the mounting arm (3b) and secure using the large Hex bolt, see figs 14-15.

Fig 01

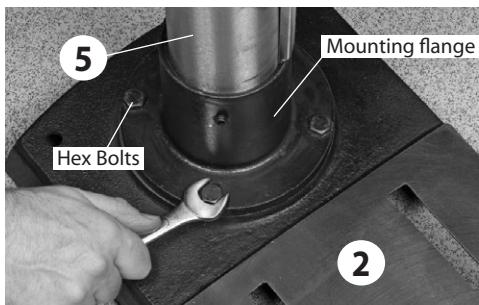


Fig 02

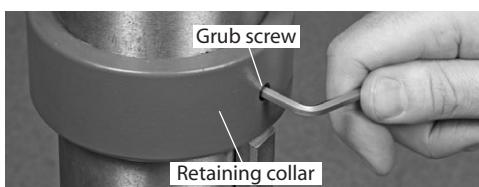
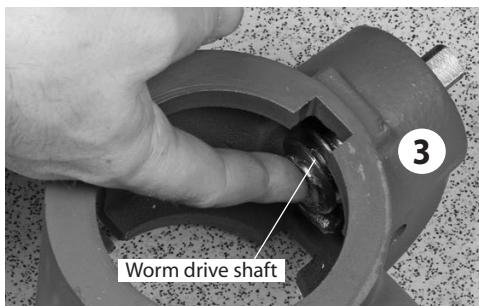
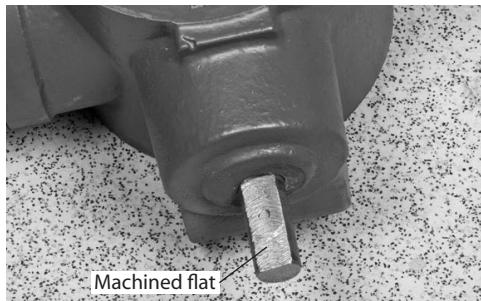
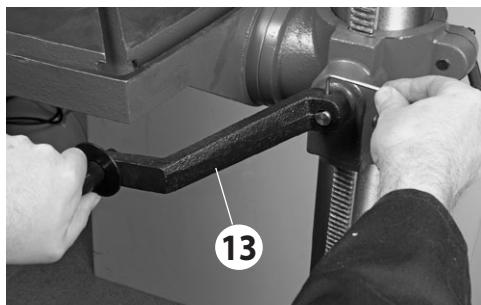


Fig 03-04

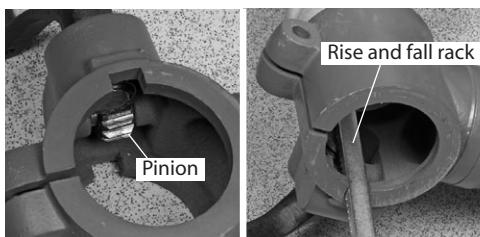




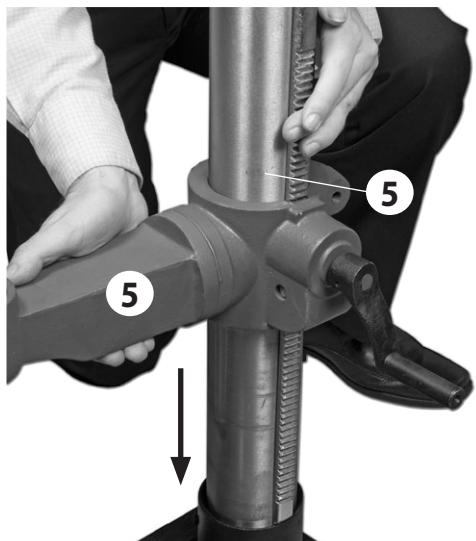
**Fig 05-06**



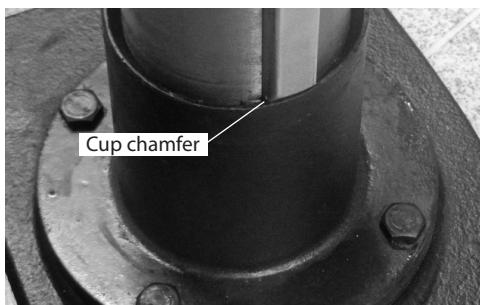
**Fig 07**



**Fig 10**



**Fig 11**



## Assembly

Fig 12

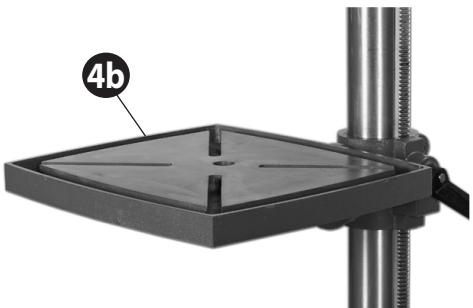
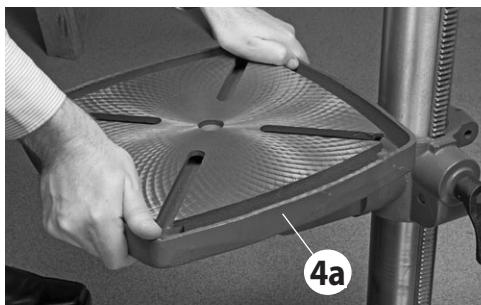


Fig 13



Pillar drill head



**WARNING! THE DRILL HEAD IS A HEAVY AND SUBSTANTIAL PIECE OF MACHINERY, YOU ARE ADVISED TO HAVE HELP TO LIFT IT CLEAR OF THE BOX AND FIT IT TO THE COLUMN.**



**CHECK** the drill head, ensure that the two hex socket grub screws that lock the head in place on the column are withdrawn and will not foul on the column (5) when the head is fitted (see fig 16). Put the lower assembly you have just been working on in the designated position, make sure it is stable and lift the drillhead (1) over the column (5) and let it drop into place. Set the drill head approximately fore and aft and lock in position using the two caphead grub screws mentioned earlier. Check that the drillhead is immobile. Everything on the drilling machine is now secured, see fig 17.

Locate the lever feed handle (7) and its securing

Fig 16

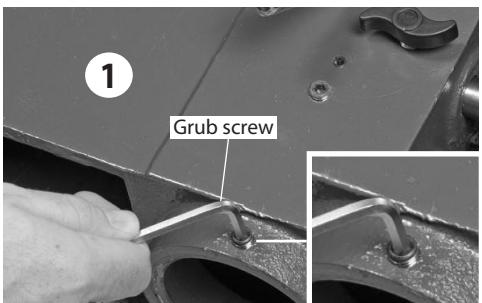
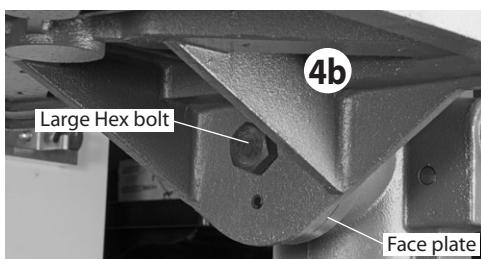


Fig 14-15

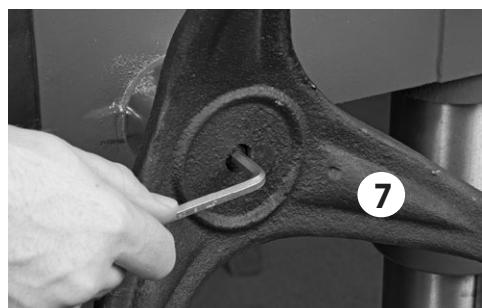
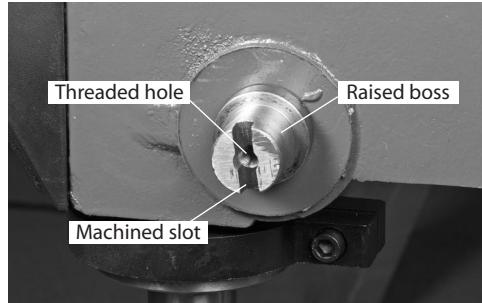
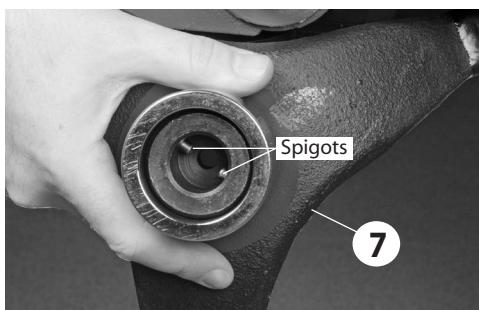


**Fig 17**



caphead bolt, **note the raised boss of the feed mechanism and the two spigots inside the feed handle.** Mount the handle over the boss and ensure the spigots inside the handle (7) engage into the machined slot in the boss. Secure with the supplied caphead bolt through the hole in the centre of the handle through to the tapped hole in the mounting boss (see figs 18-19-20-21).

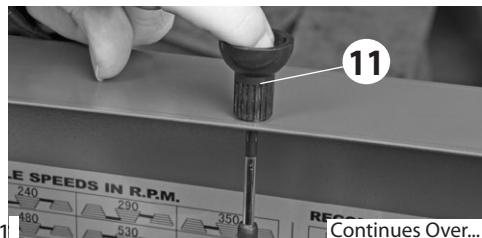
**Fig 18-19-20-21**



### Pulley cover knob

Locate the pulley cover knob (11), remove the Phillips screw, insert the screw through the pre-drilled hole in the pulley cover and secure the knob in place, see fig 22.

**Fig 21**

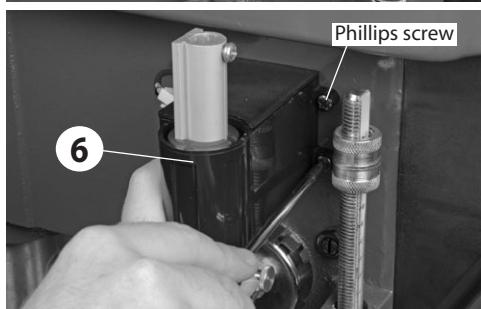
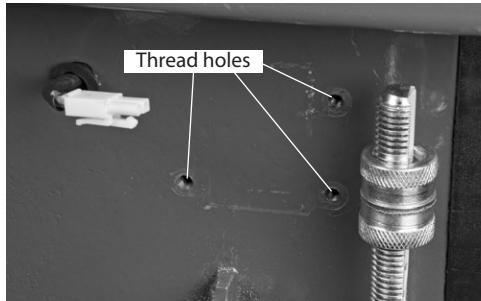


# Assembly

## Chuck guard

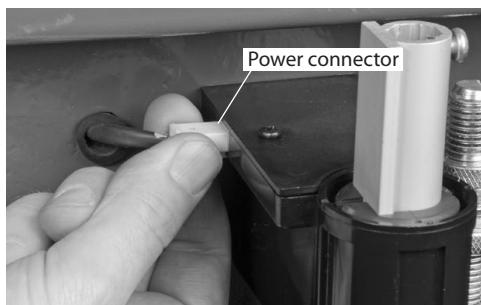
Locate the chuck guard assembly (6) and the three Phillips screws. Offer up the fixing holes in the micro switch unit with the three threaded holes to the side of the drill head (1) and secure in place with the Phillips screws, see figs 22-23

**Fig 22-23**



Plug the power connector into the micro switch unit, until it clips home, see fig 24.

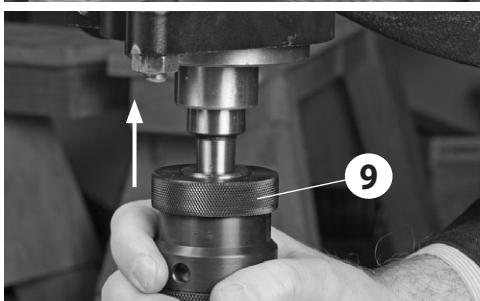
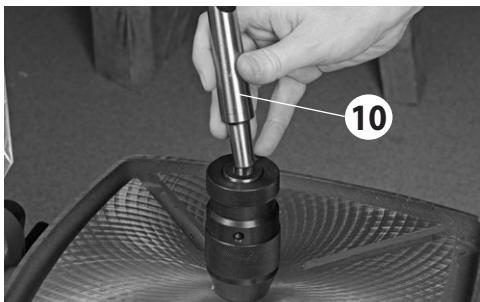
**Fig 24**



## Morse taper arbor & chuck (Radial Drills Only)

Locate the morse taper arbor (10), insert the arbor into the keyless chuck (9) then slot the assembly up into the quill. Using a high faced mallet, lightly tap it home. (see figs 25-26)

**Fig 25-26**



Bolt the pillar drill to the workbench or floor to secure it in position.

Pillar drills assembled.



505203  
**AT2001DP**



505204  
**AT2501DP**



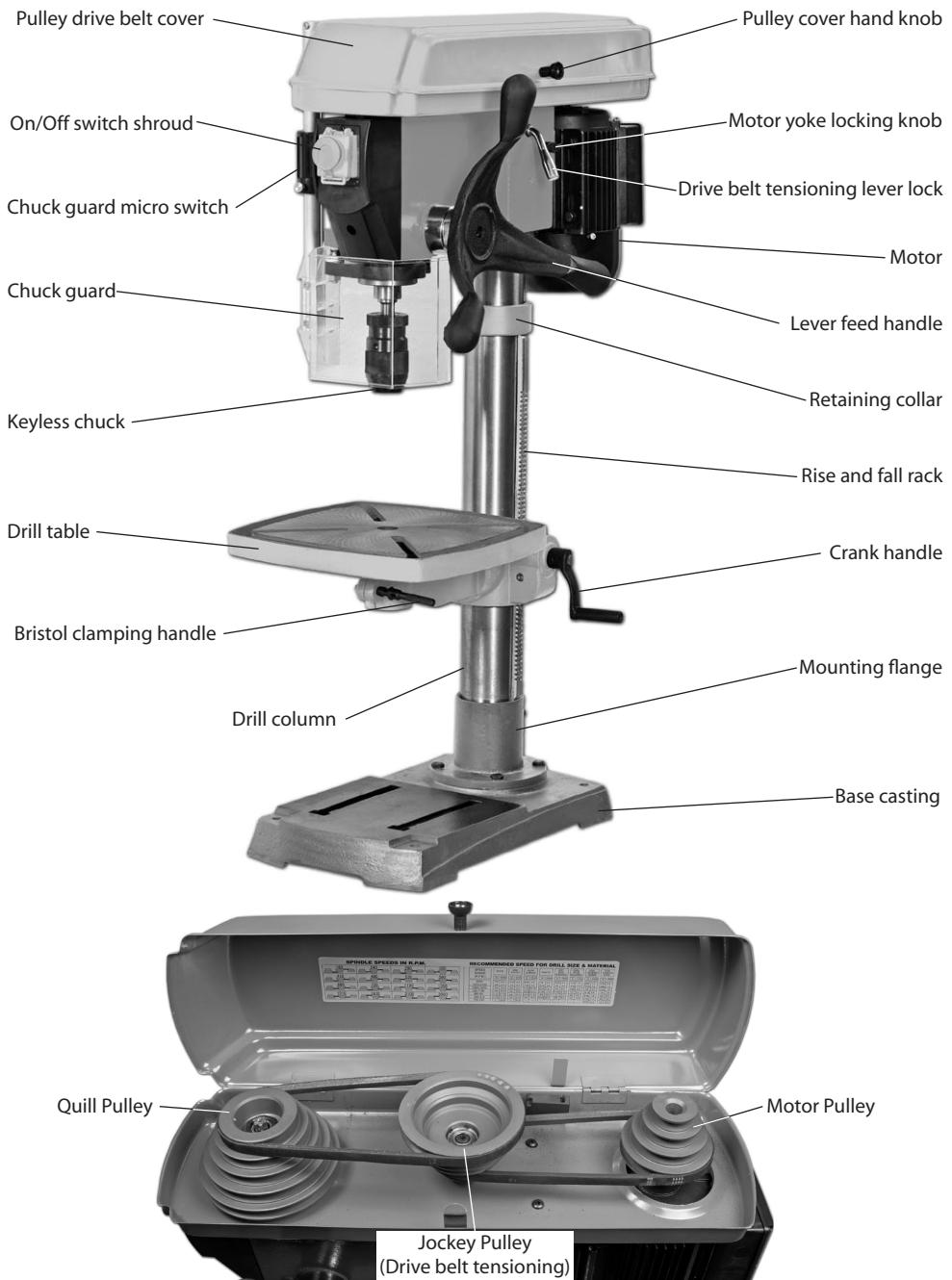
505205  
**AT2801FDP**



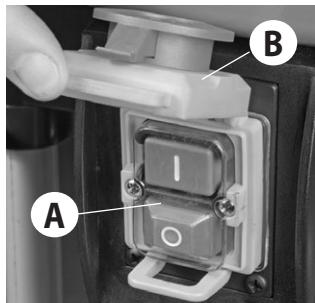
505206  
**AT3202FDP**

## Illustration and Parts Description

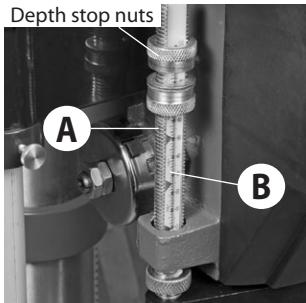
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## Illustration and Parts Description



On/Off switch (A)  
Emergency stop button (B)



Depth stop assembly (A)  
Depth stop scale (B)



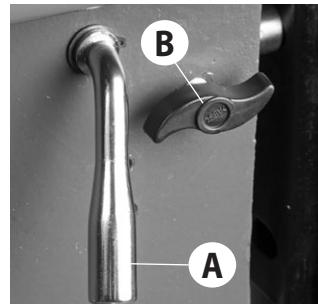
Chuck guard height locking knob



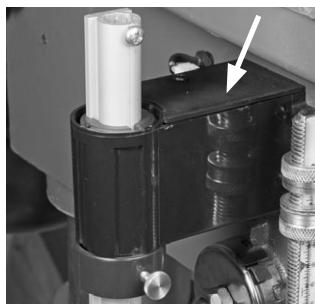
Bristol clamping handle  
for the drill table



Bristol clamping handle for  
securing the table mounting arm



Drive belt tensioning lever lock (A)  
Motor yoke butterfly knob (B)



Chuck guard micro switch  
assembly. Moving the guard  
will activate the switch, thus  
shutting off the drill

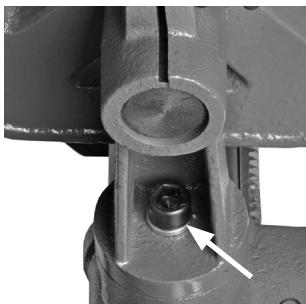


Table tilt clamping bolt

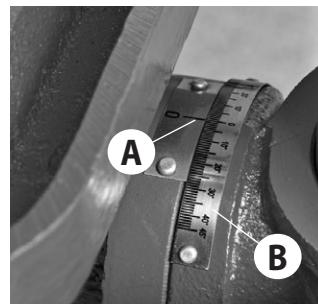


Table tilt pointer (A)  
Table tilt scale (B)

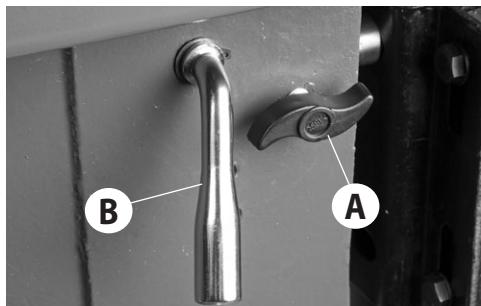
## Changing the Speed



**WARNING! DISCONNECT THE PILLAR DRILL FROM THE MAINS SUPPLY BEFORE CONTINUING!**

Locate and loosen the motor yoke butterfly locks (A). Locate the drive belt tensioning lever (B), (see fig 27) turn it clockwise, to move the motor assembly "in". This will release the tension from the drive belts (See figs 29-30-31-32).

**Fig 27**



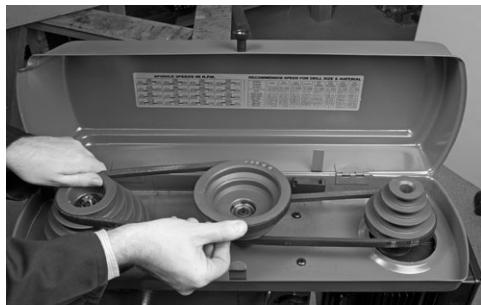
Refer to the speed select table and ascertain the belt positions for the speed you require. Move the belts to these positions.



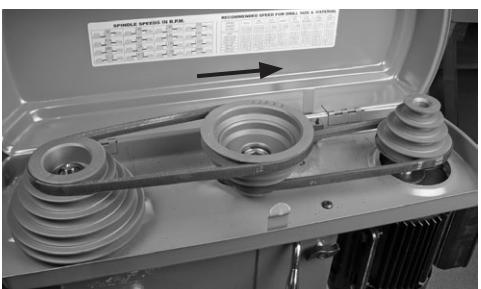
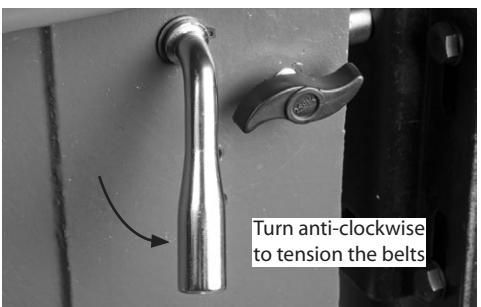
**WARNING! TAKE CARE NOT TO TRAP YOUR FINGERS WHEN REPOSITIONING THE BELT ON THE PULLEYS!**

Turn the pulley train, see fig 28 to check the belts move freely. Tension the whole belt train by turning the drive belt tensioning lever (B) anti-clockwise, to

**Fig 28**



**Fig 29-30-31-32**



move the motor assembly "out". Tighten the motor yoke butterfly knobs (A) to lock the motor assembly in position.

# Speed Select Table

## SPINDLE SPEEDS IN R.P.M.

160	240	290	350
410	480	530	590
660	720	1190	1350
1510	1970	2100	3000
180	300	350	400
480	530	860	910
1180	1230	1540	2000

505203 (AT2001DP)  
505205 (AT2801FDP)

## RECOMMENDED SPEED FOR DRILL SIZE & MATERIAL

SPEED RANGE (R.P.M.)	WOOD	ZINC & BRASS	ALUM. PLASTIC	CASt IRON & BRONZE	STEEL MILDALE & MEALABLE	STEEL CASTED STAINLESS & CARBON 87000
3000	1/4 6.4	3/16 4.8	5/32 4.0	1/8 3.2	3/32 2.4	1/16 1.6
1970-2100	3/8 9.5	7/32 5.5	3/16 4.8	1/8 3.2	3/32 2.4	3/64 1.6
1360-1970	5/8 16.0	9/32 9.5	11/32 8.3	5/16 7.9	1/4 6.4	5/32 4.0
720-1180	7/8 22.0	1/2 12.5	7/16 11.0	11/32 8.75	1/4 6.4	11/32 8.75
480-60	1-1/8 31.75	3/4 19.0	11/16 17.5	5/8 16.0	1/2 12.5	3/16 4.8
290-410	1-7/8 41.4	7/8 22.0	3/4 19.0	11/16 17.5	5/8 16.0	1/8 3.2
160-240	2 50.8	1 25.4	—	—	—	—

## SPINDLE SPEEDS IN R.P.M.

### RECOMMENDED SPEED FOR DRILL SIZE & MATERIAL

SPEED RANGE (R.P.M.)	WOOD	ZINC & BRASS	ALUM. PLASTIC	IRON STEEL
2740	3/8 9.5	7/32 5.6	1/8 3.2	1/16 1.6
1410-2270	5/8 16.0	11/32 8.75	1/4 6.4	3/16 4.8
970-1280	7/8 22.0	15/32 12.0	11/32 8.75	1/8 3.2
480-580	1-1/4 31.75	11/16 17.5	1/2 12.5	5/8 16.0
250-400	1-7/8 41.4	3/4 19.0	5/8 16.0	3/16 4.8
180	2 50.8	7/8 22.0	3/4 19.0	1/8 3.2

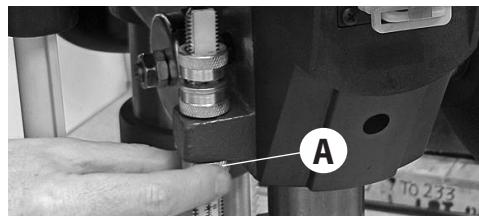
# Removing the Chuck Assembly

## Preparation

### You will require the morse taper drift (11)

Lower the quill to its maximum depth by turning the feed lever handle. While holding the handle adjust the depth stop nuts (A) to lock the quill in position, (See fig 33)

**Fig 33**

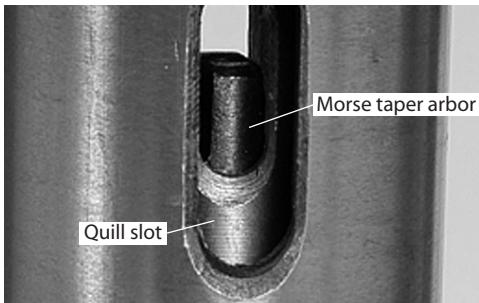


Place a piece of timber on the drill table to prevent the chuck from being damaged and lower the quill to its maximum depth by turning the feed lever handle.

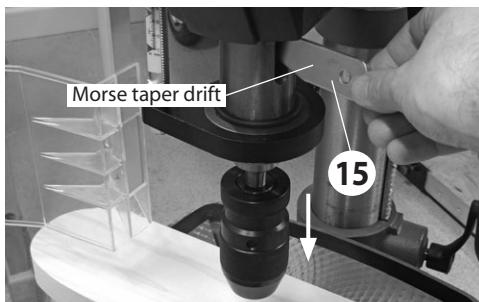
## Removing the chuck

While holding the handle in place turn the chuck to line up the morse taper arbor in the quill's machined slot, (See fig 34). Insert the morse taper drift (11) in the quill's slot, thus pushing the morse taper down and releasing the chuck, (See fig 35).

**Fig 34**



**Fig 35**





**WARNING! DISCONNECT THE MACHINE FROM THE MAINS SUPPLY BEFORE CONTINUING!**

### Cleaning

Excessive dust in the motor can cause excessive heat to develop. Every effort should be made to prevent foreign material from entering the motor.

When operated under conditions likely to permit accumulations of dust, dirt or waste, a visual inspection should be made at frequent intervals. Accumulations of dry dust can usually be blown out successfully.

**Caution: To avoid eye injury or adverse reaction to dust, high pressure hoses should not be used especially in poorly ventilated areas. The operator performing this cleaning function should wear safety goggles and dust filter mask.**

After cleaning all dust and debris a light coating of machine oil on the quill then to spread the oil.

If the machine is going to stand idle for any length of time, a light coat of spray or machine oil over the column and table will prevent rusting.

### Electrics



**WARNING! DO NOT USE THE MACHINE IF THE POWER CABLE HAS BECOME DAMAGED**

If any servicing (other than the above cleaning) becomes necessary the unit should be returned to Axminster Tool Centre to be repaired by one of our qualified electricians. Contact our technical sales department for further assistance.

Call 03332 406406

Email [technical@axminster.co.uk](mailto:technical@axminster.co.uk)



**WARNING! DO NOT ATTEMPT TO REPAIR IT YOURSELF CONTACT OUR TECHNICAL SALES TEAM FOR ASSISTANCE!**

### Motor speed

The speed of the motor cannot be regulated or changed - no adjustment is necessary.

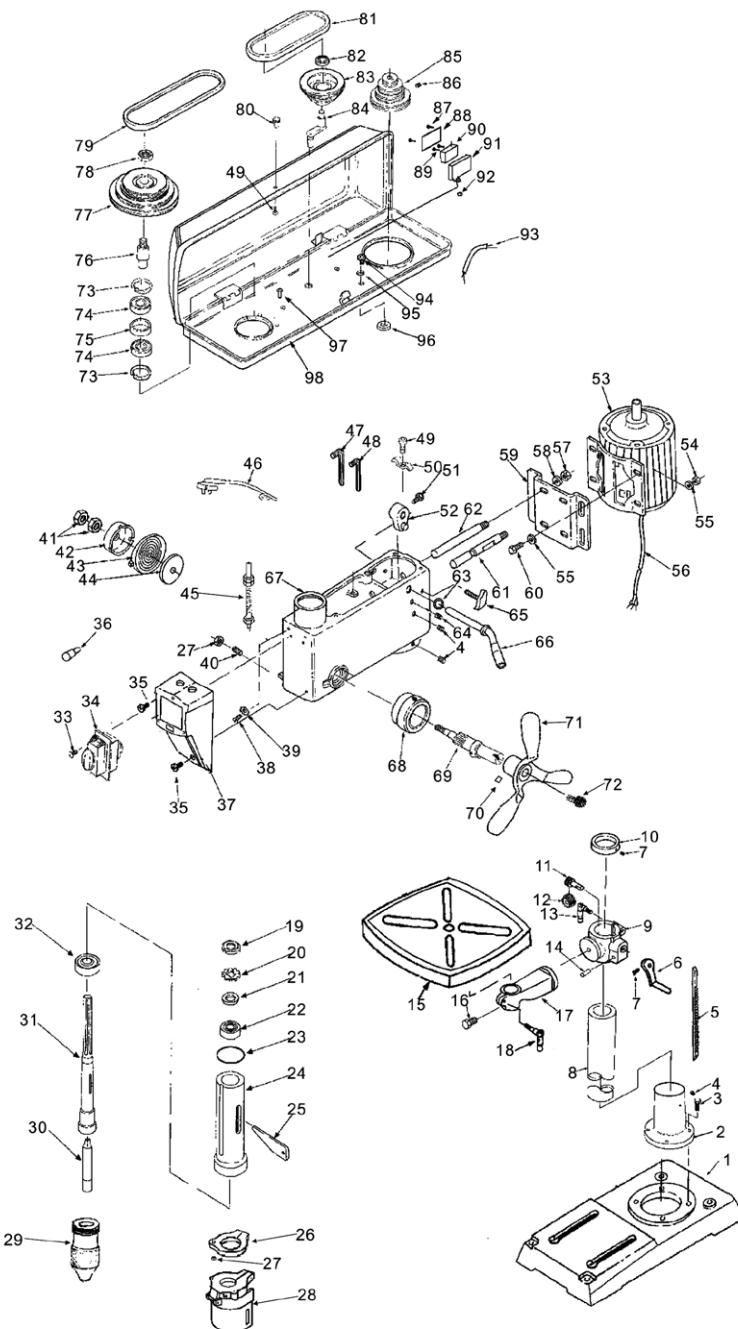


## Troubleshooting

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<b>TROUBLE</b>	<b>PROBABLE CAUSE</b>	<b>REMEDY</b>
Noisy operation	1. Incorrect belt tension 2. Dry Spindle 3. Loose spindle pulley  4. Loose motor pulley	1. Adjust the tension 2. Lubricate spindle 3. Checking tightness of retaining nut on pulley, and tighten if necessary 4. Tighten set screws in pulleys
Drill bit burns	1. Incorrect speed 2. Chips not coming out of hole 3. Dull Drill bit  4. Feeding too slow  5. Not lubricated	1. Change speed 2. Retract drill bit frequently to clear chips 3. Resharpen drill bit 4. Feed fast enough-allow drill bit to cut. 5. Lubricate drill bit
Drill bit leads off hole not round	1. Hard grain in wood or lengths of cutting lips and/or angles not equal  2. Bent drill bit	1. Resharpen drill bit correctly  2. Replace drill bit
Wood splinters on underside	1. No "back-up material" under workpiece	1. Use "back-up material"
Workpiece torn loose from hand	1. Not supported or clamped properly	1. Support workpiece or clamp it
Drill bit binds in workpiece	1. Work piece pinching drill bit or excessive feed pressure  2. Improper belt tension	1. Support Work piece or clamp it  2. Adjust tension
Excessive drill bit runout or wobble	1. Bent drill bit 2. Worn spindle bearings 3. Drill bit not properly installed in chuck 4. Chuck not properly installed	1. Use a straight drill bit 2. Replace bearings 3. Install drill bit properly 4. Install chuck properly
Quill Returns too slow or too fast	1. Spring has improper tension	1. Adjust spring tension
Chuck will not stay attached to spindle it falls off when trying to install it	1. Dirty, grease, or oil on the tapered inside, surface of chuck or on the spindles tapered surface	1. Make sure all surfaces are free of dust and grease

## **Parts Breakdown/List (505203)**



## Parts Breakdown/List (505203)

No.	Desc. of parts	D&D Drawing No.	Q'ty
1	Base	13301001A	1
2	Support column	16101002B	1
3	Hex. Head screw	GB5781-86 M10x35	4
4	Hex. Socket head screw	GB80-85 M10x12	1
5	Rack	16101010A	1
6	Crank	13201009	1
7	Hex. Socket head screw	GB80-85 M6x10	2
8	Table column	16101003B	1
9	Table support w/indicator	16101004	1
10	Collar rack	16101011	1
11	Worm	16101008	1
12	Diagonal gear pivot	16101006	1
13	Table support lock	16101012A	1
14	Pin	16101007	1
15	Table w/scale	16101014H	1
16	Hex. Head screw	GB5781-86 M16x35	1
17	Table arm	16101005	1
18	Table arm lock	16101013A	1
19	Lock nut M20x1.5	16103005	1
20	Locking ring	16103004	1
21	Washer	16103003	1
22	Ball bearing	GB276-89/60203	1
23	Rubber washer	16103006	1
24	Quill	16103002	1
25	Wedge drift	16103008	1
26	Collar	16108005-1A	1
27	Hex. Nut	GB6172-86 M10	2
28	Chuck guard	16108002	1
29	Keyless chuck	13103006E	1
30	Arbor	16103007A	1
31	Spindle	16103001	1
32	Ball bearing	GB276-89/80204	1
33	Self tapping screw	GB845-85 ST4.2x9.5	4

34	Switch	KJD12A	1
35	Pan head screw	GB818-85 M5x16	3
36	Wire terminal	CE-5	1
37	Switch box	16102008D	1
38	Pan head screw	GB818-85 M5x6	2
39	Lockwasher	GB862.1-87/5	2
40	Special screw set	16102021	1
41	Hex. nut	GB6172-86 M12	2
42	Spring cap	16104008	1
43	Quill spring	16104009	1
44	Spring cover	16104007A	1
45	Depth stop thread assem.	16108005	1
46	Plug & cable	16102015A1	1
47	Allen key	GB5356-86 S3	1
48	Allen key	GB5356-86 S5	1
49	Pan head screw	GB818-85 M5x10	2
50	Cable socket	16102014A	1
51	Hex. Head screw	GB5781-86 M8x16	1
52	Adjusting lever	16102006	1
53	Motor	YLL7124	1
54	Hex. Nut	GB6170-86 M8	4
55	Washer	GB67.2-85/8	8
56	Motor cable	16102016G	2
57	Hex. Nut	GB6170-86 M12	2
58	Lockwasher	GB93-87/12	2
59	Motor mounting plate	16102007A	8
60	Hex. Bolt	GB5781-86 M8x16	4
61	Motor bracket support A	16102003	1
62	Motor bracket support B	16102002	1
63	Circlip	GB894.1-86/15	1
64	Roll pin	GB879-86 6x25	2
65	Fixing screw	16102005E	2
66	Belt tension lever	16102004	1
67	Head	16102001C	1

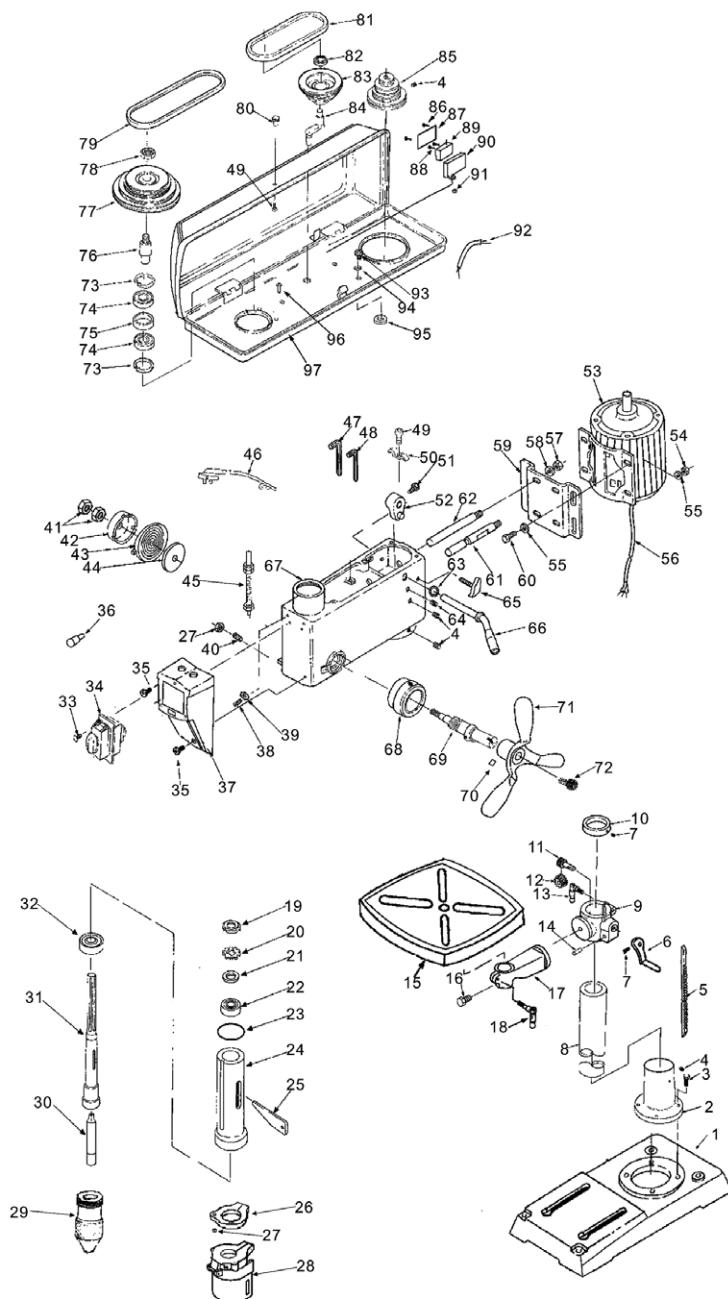
## Parts Breakdown/List (505203)

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68	Depth stop collar w/ scale	16104003C	1
69	Hub assm.	16104002B	1
70	Roll pin	GB879-86 6x45	1
71	Feed handle	16104001C	1
72	Cylindric hex. Socket set screw	GB70-86 M8x30	1
73	Retaining ring	16102024	2
74	Ball bearing	GB276-89 60204	1
75	Ball bearing	16102023A	1
76	Pulley insert	16102022	1
77	Spindle pulley	16105009	1
78	Pulley nut	16102025	1
79	V belt A33	16105011C	1
80	Knob	16105008	1
81	Belt A 29	16805010C	1
82	Ball bearing	GB276-89/60202	2

83	Center pulley	16105006	1
84	Idler pivot	16105007	1
85	Motor pulley	16105005	1
86	Hex.Socket head screw	GB80-85 M8x12	1
87	Pan head screw	GB818-85 M3x25	2
88	Micro switch	16105013-2	1
89	Pan head screw	GB818-85 M3x16	2
90	Micro switch	XN-5	1
91	Micro switch housing	16105013-1	1
92	Hex.nut	GB6170-86 M3	4
93	Cable-micro switch	16102029C	1
94	Pan head screw	GB818-85 M6x8	4
95	Washer	GB97.2-85/6	4
96	Foam washer	13105009	4
97	Rubber bushing	115101027	1
98	Pulley cover w/labels	16105000A	1

## Parts Breakdown/List (505204-505205)



## Parts Breakdown/List (505204-505205)

No.	Desc. of parts	D&D Drawing No.	Q'ty
1	Base	16101001A	1
2	Column support	16201002A	1
3	Hex. Head screw	GB5781-86 M10x35	4
4	Hex. Socket set screw	GB80-85 M10x12	4
5	Rack	16101010	1
6	Crank	13201009	1
7	Hex. Socket set screw	GB80-85 M6x10	2
8	Table column	16201003A	1
9	Table support w/ indicator	16201004	1
10	Collar rack	16201011	1
11	Worm	16101008	1
12	Diagonal gear pivot	16101006	1
13	Table support lock	16101012A	1
14	Pin	16101007	1
15	Table w/scale	16201014D	1
16	Hex. Head screw	GB5781-86 M16x35	1
17	Table arm	16201005	1
18	Table arm lock	16101013A	1
19	Lock nut M20x1.5	16103005	1
20	Locking ring	16103004	1
21	Washer	16103003	1
22	Ball bearing	GB276-89/60203	1
23	Rubber washer	16203006	1
24	Quill	16203002A	1
25	Wedge drift	16103008	1
26	Collar	16108005-1A	1
27	Hex. Nut	GB6172-86 M10	2
28	Chuck guard	20108002	1
29	Keyless chuck	16103009D	1
30	Arbor	16103007C	1
31	Spindle	16203001A	1
32	Ball bearing	GB276-89 80205	1
33	Self tapping screw	GB845-85 ST4.2x9.5	4
34	Switch	KJD12A	1
35	Pan head screw	GB818-85 M5x16	3

36	Wire terminal	CE-5	1
37	Switch box	16202008D	1
38	Pan head screw	GB818-85 M5x6	2
39	Lock washer	GB862.1-87/5	2
40	Special screw set	16102021	1
41	Hex. nut	GB6172-86 M12	2
42	Spring cap	16104008	1
43	Quill spring	16104009	1
44	Spring cover	16104007A	1
45	Depth stop thread assem.	16108005	1
46	Plug & cable	16102015A1	1
47	Allen key	GB5356-86 S3	1
48	Allen key	GB5356-86 S5	1
49	Pan head screw	GB818-85 M5x10	1
50	Cable socket	16102014A	1
51	Hex. Head screw	GB5781-86 M8x16	1
52	Adjusting lever	16102006	1
53	Motor	YLL8014	1
54	Hex. Nut	GB6170-86 M8	4
55	Washer	GB67.2-85/8	8
56	Motor cable	16202016K	1
57	Hex. Nut	GB6170-86 M12	2
58	Lockwasher	GB93-87/12	2
59	Motor mounting plate	16102007B	1
60	Hex. Bolt	GB5781-86 M8x16	4
61	Motor bracket support A	16202003	1
62	Motor bracket support B	16202002	1
63	Circlip	GB894.1-86/15	1
64	Roll pin	GB879-86 6x25	2
65	Fixing screw	16102005E	2
66	Belt tension lever	16202004	1
67	Head	16202001H	1
68	Depth stop collar w/ scale	16104003C	1
69	Hub assm.	16104002B	1

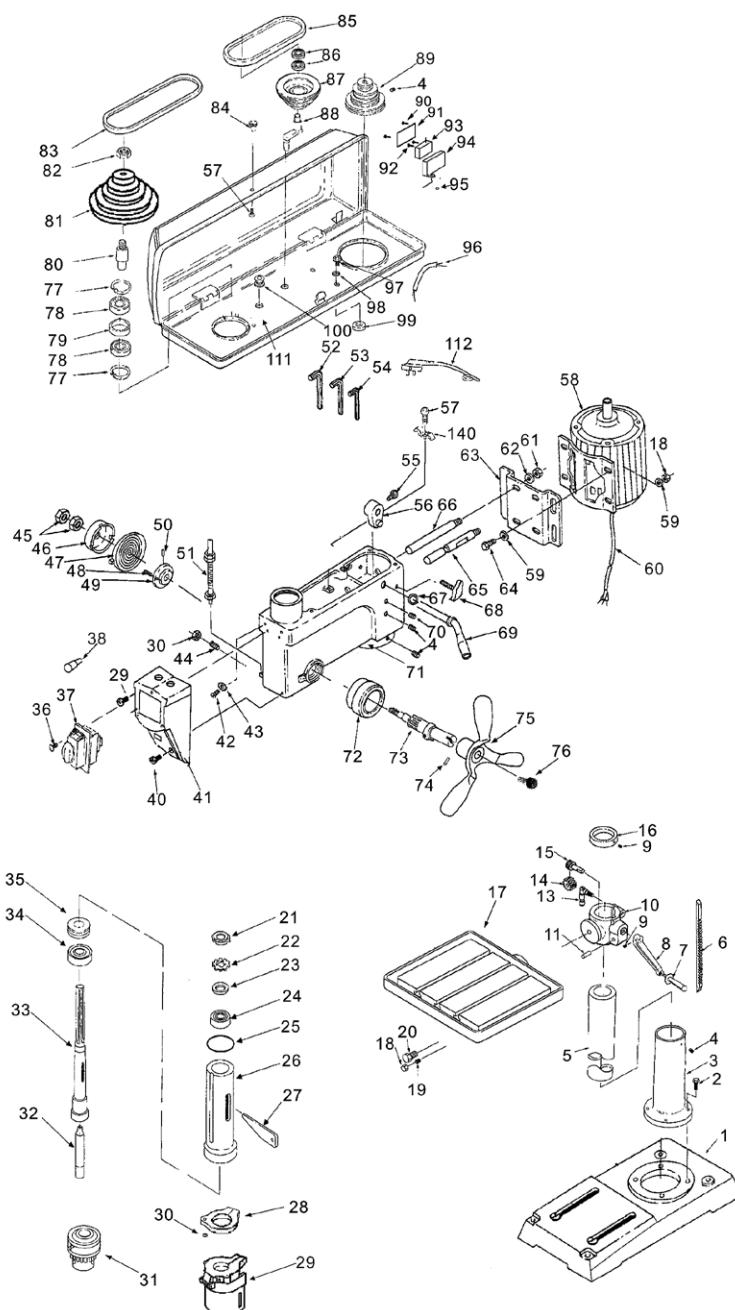
## Parts Breakdown/List (505204-505205)

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70	Roll pin	GB879-86 6x45	1
71	Feed handle	16104001C	1
72	Cylindric hex. Socket set screw	GB70-86 M8x30	1
73	Retainning ring	16202024	2
74	Ball bearing	GB276-89/60205	2
75	Tube	16102023A	1
76	Pulley insert	16202022	1
77	Spindle pulley	16205009	1
78	Pulley nut	16102025	1
79	V belt A33	16205011A	1
80	Knob	16105008	1
81	Belt A29	16205010A	1
82	Ball bearing	GB276-89/60202	2
83	Center pulley	16205006	1

84	Idler pivot	16205007	1
85	Motor pulley	16205005	1
86	Pan head screw	GB818-85 M3x25	2
87	Micro switch	16105013-2	1
88	Pan head screw	GB818-85 M3x16	2
89	Micro switch	XN-5	1
90	Micro switch housing	16105013-1	1
91	Hex. Nut	GB6170-86 M3	4
92	Cable - microswitch	16102029C	1
93	Pan head screw	GB818-85 M6x8	4
94	Washer	GB97.2-85/6	4
95	Foam washer	13105009	4
96	Rubber bushing	115101027	1
97	Pulley cover w/labels	16205000D	1

## Parts Breakdown/List (505206)



## Parts Breakdown/List (505206)

---

No.	Desc. of parts	D&D Drawing No.	Q'ty
1	Base	20101001A	1
2	Hex. Head screw	GB5781-86 M12x40	4
3	Column support	20101002	1
4	Hex. Socket set screw	GB80-85 M10x12	4
5	Table column	20101003	1
6	Rack	20101010	1
7	Handle-crank	20101009	1
8	Crank	20101009-1	1
9	Hex. Socket set screw	GB20-85 M6x10	2
10	Table support w/indicator	20101004	1
11	Pin	16101007	1
13	Table lock	16101012A	1
14	Diagonal gear pivot	16101006	1
15	Worm elevation	20101008	1
16	Collar rack	20101011	1
17	Table w/scale	20101014B	1
18	Hex. Nut	GB6170-86 M8	5
19	Table locking pin	20101015	1
20	Hex. Head screw	GB5781-86 M20x50	1
21	Lock nut M20x1.5	20103005	1
22	Locking ring	20103004	1
23	Washer	20103003	1
24	Ball bearing	GB276-89/60204	1
25	Rubber washer	20103006	1
26	Quill	20103002A	1
27	Wedge drift	16103008	1
28	Collar	20108005-1	1
29	Chuck guard	20108002	1
30	Hex. Nut	GB6170-83 M10	1
31	Keyless chuck	20103009B	1
32	Arbor	20103007C	1
33	Spindle	20103001	1
34	Ball bearing	GB276-89/80206	1
35	Thrust bearing	GB301-87 8706	1

36	Self tapping screw	GB845-85 ST4.2x9.5	4
37	Switch	KJD12	1
38	Wire terminal	16102019	1
39	Pan head screw	GB818-85 M6x15	2
40	Pan head screw	GB818-85 M6x30	2
41	Switch box	20102008D	1
42	Pan head screw	GB818-85 M5x6	2
43	Lockwasher	GB862.1-87/5	2
44	Special screw set	16102021	1
45	Hex.Nut	GB6172-86 M12	2
46	Spring cap	20104007	1
47	Quill spring	20104008	1
48	Roll pin	GB879-86/6x16	1
49	Quill spring seat	20104006	1
50	Roll pin	GB879-86/2.5x10	1
51	Depth stop thread assem.	20108005	1
52	Allen key	GB5356-86 S3	1
53	Allen key	GB5356-86 S4	1
54	Allen key	GB5356-86 S5	1
55	Hex. Head screw	GB5781-86 M8x16	1
56	Adjusting lever	16102006	1
57	Pan head screw	GB818-85 M5x10	2
58	Motor	YLI8024	1
59	Washer	GB97.2-85/8	8
60	Motor cable	20102016D	1
61	Hex. Nut	GB6170-86 M12	2
62	Lockwasher	GB93-87 /12	2
63	Motor bracket sup- port	16102007B	1
64	Hex. Head screw	GB5781-86 M8x25	4
65	Motor bracket shaft-right	20101002	1
66	Motor bracket shaft-left	20102003	1
67	Circlip	GB894.1-86/15	1
68	Fixing screw	16102005E	2
69	Belt tension lever	20102004	1

## Parts Breakdown/List (505206)

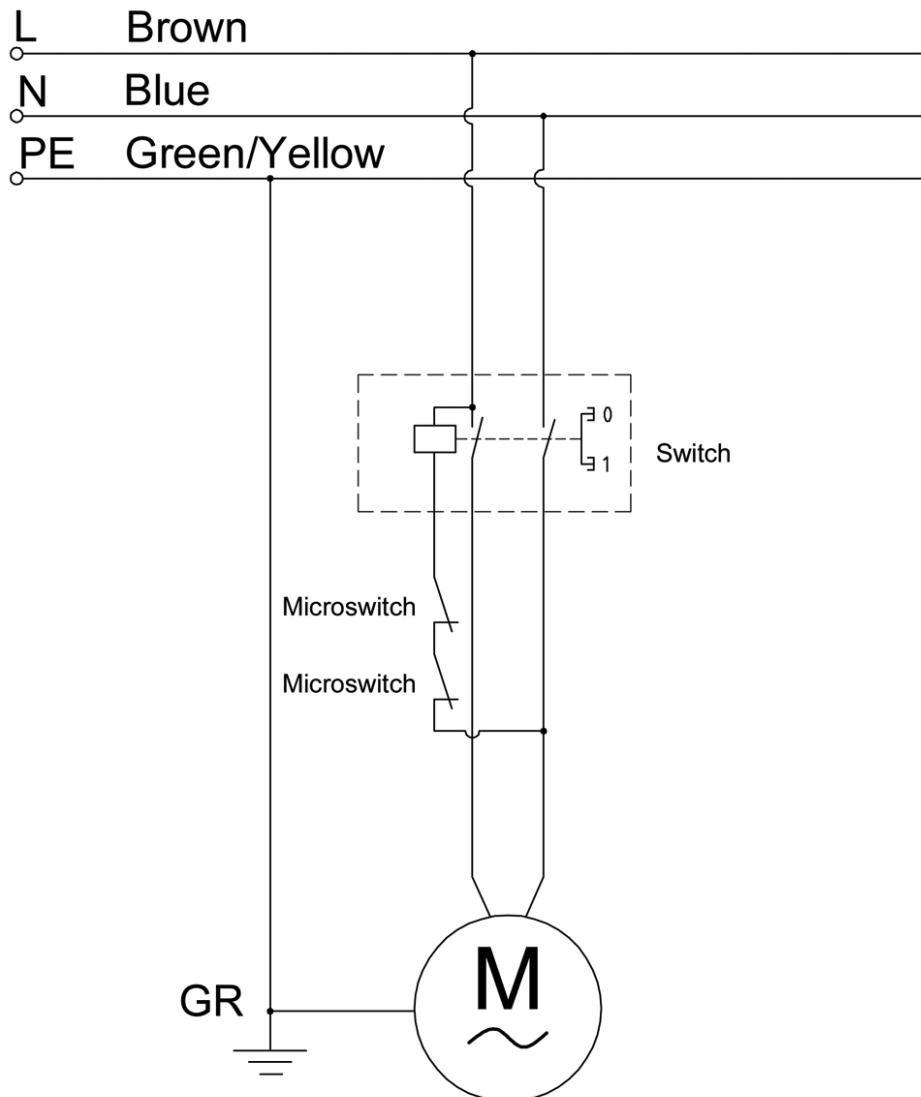
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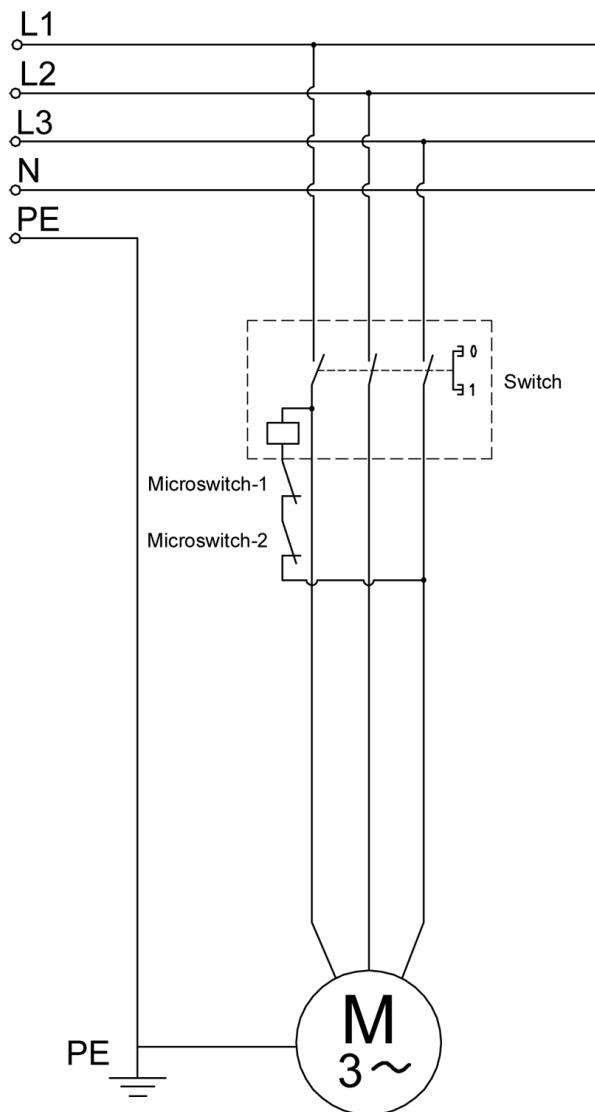
70	Roll pin	GB879-86/8x25	2
71	Head	20102001K	1
72	Depth stop collar w/ scale	16104003C	1
73	Hub. Assm.	20104002B	1
74	Roll pin	GB879-86 6x45	1
75	Feed handle	16104001D	1
76	Cylindric hex socket screw	GB70-86 M8x30	1
77	Retaining ring	20102024	2
78	Ball bearing	GB276-89/60206	2
79	Bearing spacer	20102023A	1
80	Pulley insert	20102022	1
81	Spindle pulley	20105009	1
82	Pulley nut	20102025	1
83	V belt A33	20105010E	1
84	Knob	16105008D	1
85	Belt A29	16205011A	1

86	Ball bearing	GB276-89/60202	2
87	Center pulley	20105006	1
88	Idler pivot	20105007	1
89	Motor pulley	20105005B	1
90	Pan head screw	GB818-85 M3x25	2
91	Micro switch cover	16105013-2	1
92	Pan head screw	GB818-85 M3x16	2
93	Micro switch	XN-5	1
94	Micro switch housing	16105013-1	1
95	Hex. Nut	GB6170-86 M3	4
96	Cable microswitch	20102029B	1
97	Pan head screw	GB818-85 M6x8	4
98	Washer	GB97.2-85/6	4
99	Foam washer	13105009	4
100	Rubber bushing	115101027	1
101	Pulley cover w/labels	20105000D	1

## Wiring Diagram (505203-505204-505205)

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RDM3202-109

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The Guarantee assumes that you have bought the correct machine for the  
required operation, in accordance with our guidelines; have operated and  
maintained it in accordance with the instruction manual; and that all cutting  
machines will be used with a blade which is sharp and serviceable at all times.  
It does not cover consumable items purchased with the original product,  
including original blades or abrasives.

Normal wear and tear; misuse, abuse and neglect are excluded and the machine  
should not have been modified in any way. Please do not attempt to service the  
product without first contacting us; we are happy to guide you but failure to do  
so may invalidate the guarantee.

The Guarantee is transferable from owner to owner in the first three years but  
you must have original proof of purchase. Should we need to replace a machine  
in the first three years the guarantee will still continue to be effective from the  
original purchase date.

Full Terms and Conditions can be found at [axminster.co.uk/terms](http://axminster.co.uk/terms)

This guarantee does not affect your statutory rights.

For more information visit [axminster.co.uk/3years](http://axminster.co.uk/3years)



Please dispose of packaging for the product in a responsible manner. It is suitable for recycling.  
Help to protect the environment, take the packaging to the local recycling centre and place into  
the appropriate recycling bin.

## Only for EU countries



Do not dispose of electric tools together with household waste material. In observance of  
European Directive 2002/96/EC on waste electrical and electronic equipment and its  
implementation in accordance with national law, electric tools that have reached the end of their  
life must be collected separately and returned to an environmentally compatible recycling facility.

Axminster Tools & Machinery Ltd  
Weycroft Avenue, Axminster, Devon EX13 5PH

**[axminster.co.uk](http://axminster.co.uk)**